AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

Amend the paragraph beginning at page 7, line 33 to read as follows:

When assembled the stator 8 and the rotor 3 composed the electric motor which rotates the impeller 5 which is attached to the rotor. The impeller rotation attracts air trough the air inlet 10 and compresses it in the chamber 12. The air is blown under pressure through the air outlet 9. The tube to patient's mask is connected to the air outlet [[11]] 9.

Amend the paragraph beginning at page 24, line 17 to read as follows:

On the ~~figures ?~~ figure 25 d1 and d2 have two different behaviors, according to t2 and t4 definitions. t2 is defined when the absolute value of airflow starts to decrease within the inspiration phase or shows a fixed delay after t1. t4 is defined when the absolute value of airflow starts to decrease within the expiration phase or shows a fixed delay after t3.

Amend the paragraph beginning at page 13, line 19 to read as follows:

In a preferred embodiment the apparatus has a power supply manager 29 which is connected to a battery pack 30 or to the power supply sector via an external plug 31. The power supply manager comprises a communication module which enables to avoid expensive connectors and cables. This module is used to transmit data trough the power source wires. As represented in FIG. 10, the pressure control unit 37 transmit a binary data flow 60 to a Frequency

Shift Keying (FSK) modulator 50 which transforms these binary data in a modulation of the tension frequency of the tension applied on the voltage controlled current source 52. The external power supply is connected on the voltage controlled current source 52 with its 0V plot 57 and its positive plot 56, so that the voltage controlled current source 52 transmit voltage frequency and possibly the modulation corresponding to the data. In the same way when a modulated voltage is applied by other modules or sensors on the positive plot 56, a FSK demodulator 51 will convert the voltage frequency modulation into binary data 61 and transmit them to the pressure control unit 37. This voltage is transmitted by the positive plot 56, so that each sensor or module connected to the power source is able to receive or transmit information.

Amend the paragraph beginning at page 17, line 5 to read as follows:

In a preferred embodiment of the present invention, the apparatus comprises means for measuring the patient's breathing parameters at the patients mask. These means are preferentially means that enables to determine the airflow. The apparatus allowing fast accelerations and decelerations allows to modulate the pressure to the patient in respect to the illness to treat. Based on the high speed and efficiency of the centrifugal blower, the apparatus can accommodate almost any kinds of pressure patterns to any kinds of breaths but only a few among those are useful in the respiratory treatments. The apparatus has thus the ability to differentiate the two basic states of the respiration: inspiration and expiration. Two of consecutive basic states constitute one breathing step. The sensors provided in the apparatus enables the pressure control unit 37 to determinate the pressure required for the patient and to send the corresponding Pulse

Width Modulation PWM value to the micro controller 26. Preferentially the pressure control unit comprises an estimation module 100 or program which determine the pressure to apply, and comprises a control loop which converts this value of pressure into the tension PWM to apply to the blower. The determination by the pressure control 37 of the tension PWM to apply is represented in FIG. 14. The outputs of the estimation module 100 are the value of the inspiration pressure PI which is the pressure maintained at the patient's mask during the inspiration, and the value of the expiration pressure PE which is the pressure maintained at the patient's mask during the expiration. The patient's breathing parameters, and preferentially the airflow parameters, enables the computation of the inspiration and expiration, this latest computation enables the estimation module 100 to determinate, which step of the patient's breathing is occurring. A breath estimation module 132 is qualifying a breath in shape, energy(volume) and frequency. The clinician or a qualified user enters parameters or shapes of the delivered pressures for the expiration phase and the inspiration phase. The clinician entered also parameters 120 defining how the estimation module 100 is going to react following events detected in the breath estimation module. It is well known that a feedback of the patient with his treatment is helping compliance, thus the patient can have an access to a parameter 122 ranging from minimum to maximum that is qualified to be "comfort vs efficiency". This patient setting 122 is having the weight that the clinician is giving to it, from pure placebo effect to some level of effects. Basically the patient's settings are applied in the normal breath situation or/and have a limited action on the pressure regulation. It is also possible that the airflow is an input to the estimation module 100. Thus, with the data inputs concerning the breath estimation (and clinical symptoms

or event associated with), the inspiration/expiration computation and the clinical settings, and possibly the airflow computation 110 and patient settings, the pressure control unit 37 by the estimation module 100 is able to determinate the pressures required PI and PE. Those two values can be addressed to two different outputs 102 and 104 where a switch is able, relative to the inspiration/expiration computation, to connect to the required output regarding if the patient is breathing in or out. The pressure control unit 37 comprises a pressure control loop 106 which, by comparing the pressure measured in the mask and the value of pressure required PI or PE, is able to adjust the tension PWM 140 in order to obtain the correct pressure in the mask. The FIG. 15 represents one pattern of the pressure of treatment provided according to the airflow due to the patient breathing. In this example, the clinical technician has set a special modulation of pressures PI and PE during respectively the inspiration and the expiration; after a while as no special event occurs the values of the two pressures are changed. The estimation module 100 can preferentially use a clock time 25 to time mark the breathing parameters.

Amend the paragraph beginning at page 19, line 33 to read as follows:

Preferentially, the data of the pressures PM 112 and PB 114 which are sensed at the extremities of the tube and the data 116 of the tube coefficient K_T enable the airflow computation 130. One formula that can be use to compute the airflow from these values is:

$Airflow^3 = (PM-PB) / K_T$

Amend the paragraph bridging pages 5-6 to read as follows:

Figure 16a and [[16 b]] 16b represent respectively the patient's 35 breathing pattern A_M during time t and the pattern of the pressure of the air provided by the apparatus P_M during time t according to present invention, and

Figure 17 represents one way the apparatus reacts to an event.

Amend the paragraph beginning at page 8, line 3 to read as follows:

In a preferred implementation, represented in figure 4b, the stator 8 is a toroidal stator composed of three sectors ~~(8a, 8b and 8c),~~ which are coils 8A, 8B and 8C. Each sector has [[The]] two extremities. The coil 8A has two extremities SA and EA, the coil 8B has two extremities SB and EB and the coil 8C has two extremities SC and EC. As it is represented in figure 4a, the two extremities ~~S or E~~ of each coil are grouped and join to a wire. ~~As it is represented in figure 4a,~~ [[this]] This enables the stator to require only three wires to be connected.

Amend the paragraph bridging pages 13-14 to read as follows:

In a preferred embodiment the apparatus has a power supply manager 29 which is connected to a battery pack 30 or to the power supply sector via an external plug 31. The power supply manager comprises a communication module which enables to avoid expensive connectors and cables. This module is used to transmit data trough the power source wires. As represented in figure 10, the pressure control unit 37 transmit a binary data flow 60 to a Frequency Shift Keying (FSK) modulator 50 which transforms these binary data in a modulation of the tension frequency of the tension applied on the voltage controlled current source 52. The

external power supply is connected on the voltage controlled current source 52 with its OV plot 57 and its positive plot 56, so that the voltage controlled current source 52 transmit voltage frequency and possibly the modulation corresponding to the data. In the same way when a modulated voltage is applied by other modules or sensors on the positive plot 56, a FSK demodulator 51 will convert the voltage frequency modulation into binary data 61 and transmit them to the pressure control unit 37. This voltage is transmitted by the positive plot 56, so that each sensor or module connected to the power source is able to receive or transmit information.